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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,651	02/19/2004	Robert J. Small	063254-5006-US1	7333
9629	7590	07/05/2006	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			ANGADI, MAKI A	
			ART UNIT	PAPER NUMBER
			1765	

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/783,651

**Applicant(s)**

SMALL ET AL.

**Examiner**

Maki A. Angadi

**Art Unit**

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/1/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. The examiner acknowledges that the Application NO. 10,783,651 is a divisional application with claims 8-13 being cancelled because of a separate patent issued under Patent No. 6,756,308. The restriction for this application was improper and is withdrawn. Therefore, the Application No. 10,783,651 is subject to examination with respect to claims 1-7.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3 are rejected under 35 U.S.C. 102(e) over Tsuchiya (US Pub No. 2001/0018270).

*As to claim 1*, Tsuchiya discloses a composition for chemical mechanical planarization (paragraph 0002) consisting of an aqueous solution of ozone (paragraph 0039) and abrasive particles (paragraph 0030).

*As to claim 2*, Tsuchiya discloses abrasive particles contain silica abrasive (paragraph 0030).

*As to claim 3*, Tsuchiya discloses additive selected from the group consisting of carbonate (paragraph 0038) and acetic acid (paragraph 0041).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 4-5 are rejected under 35 U.S.C. 103(a) over Tsuchiya (US Pub No. 2001/0018270) as applied to claim 1 above, in view of Chino (US Patent No. 6,124,210).

*As to claim 4*, Tsuchiya discloses a composition for chemical mechanical planarization (paragraph 0002) consisting of an aqueous solution of ozone. The reference of Tsuchiya fails to disclose the concentration of ozone in the aqueous solution. However, Chino discloses the concentration of ozone at which ozone interactions occur (col.7, lines 27-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select ozone concentration in the cleaning process of Tsuchiya because Chino teaches that in the ozone treatment process, the number of the circular defects is reduced as the progress of the process time at a certain ozone concentration (col.7, lines 46-51).

*As to claim 5*, Tsuchiya fails to disclose the concentration of ozone in the composition. However, Chino discloses the concentration of ozone in terms of  $\text{g/Nm}^3$  (col.6, lines 31-39). The concentration of  $100 \text{ g/Nm}^3$  appears to provide minimum defect concentration for a process time of 90 sec. Therefore, it would have been obvious to one of ordinary skill in the art at the time the inventions was made to select the ozone concentration because Chino teaches that the number of circular defect is reduced as the progress of the process time for a given ozone concentration (col.7, lines 46-50).

***Claim Rejections - 35 USC § 103***

4. Claims 6-7 are rejected under 35 U.S.C. 103(a) over Tsuchiya (US Pub No. 2001/0018270) as applied to claim 1 above, in view of Chopra (US Patent No. 6,429,133).

As to *claim 6*, Tsuchiya discloses presence of alkali salts in the composition (paragraph 0038) but fails to cite the presence of ammonium salts. However, Chopra discloses the presence of ammonium salt in the composition (col.3, lines 32-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select ammonium salt in the composition of Tsuchiya because Chopra illustrates that adding ammonium salt to the solution prevents redeposition and agglomeration (col.8, lines 10-14).

As to *claim 7*, Tsuchiya discloses the presence of alkali salts in the composition (paragraph 0038) but fails to cite the presence of ammonium carbonate. Chopra discloses the use of ammonium carbonate in the slurry composition (col.8, lines 21-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select ammonium carbonate in the composition of Tsuchiya because Chopra illustrates that ammonium carbonate serves as a complexant to prevent redeposition and agglomeration, both of which may result in surface defects if not prevented (col.8, lines 11-14)..

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Grieger (US Patent No. 6,100,198) discloses a post-planarization, pre-oxide removal ozone treatment.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maki A. Angadi whose telephone number is 571-272-8213. The examiner can normally be reached on 8 AM to 4.30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G. Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MA

**NADINE G. NORTON**  
**SUPERVISOR** **EXAMINER**  
